

CLAIMS

1. Cast iron material with graphite flakes, with the following composition (in % by weight):

C: 3.4 to 4.1%,
 Si: 0.9 to 1.4%,
 Mn: 0.4 to 0.7%,
 Cu: 0.4 to 0.6%,
 S: 0.01 to 0.04%,
 O₂: 0.003 to 0.007%,
 P: ≤0.04%,

the remainder comprising Fe and unavoidable impurities, wherein the composition may also optionally contain one or more of the following elements:

Mo: 0.15 to 0.45%,
 La: 0.005 to 0.02%,
 Sr: 0.0005 to 0.01%,
 Ni: 0.05 to 0.8%,
 V: 0.005 to 0.1%,
 Sn: 0.05 to 0.15%,
 N: 0.05 to 0.08%,
 Ce: 0.01 to 0.02%

and $0.85\% \leq S_c \leq 1.05\%$ applies to the degree of saturation $S_c = C\%/4.26 - 0.3 * (Si\% + P\%)$ (C%: respective C content, Si%: respective Si content, P%: respective P content), and $1.97\% \leq MEG \leq 2.07\%$ applies to the respective quantity $\%MEG = 2.25\% - 0.2 Si\%$ (Si%: respective Si content).

2. Cast iron material according to claim 1, characterised in that the C content is 3.8 to 4.1% by weight.

3. Cast iron material according to claim 2, characterised in that the Si content is 0.9 to 1.2% by weight.
4. Cast iron material according to either claim 2 or claim 3, characterised in that the O₂ content is 0.003 to 0.004% by weight.
5. Cast iron material according to claim 1, characterised in that the C content is 3.4 to 3.6% by weight.
6. Cast iron material according to claim 5, characterised in that the Si content is 1.15 to 1.4% by weight.
7. Cast iron material according to either claim 5 or claim 6, characterised in that the Sr content is 0.005 to 0.002% by weight.
8. Cast iron material according to any one of claims 5 to 7, characterised in that the V content is 0.025 to 0.045% by weight.
9. Cast iron material according to any one of claims 5 to 8, characterised in that the Sn content is 0.05 to 0.15% by weight.
10. Cast iron material according to any one of claims 5 to 9, characterised in that the Si content is 1.15 to 1.25% by weight.
11. Cast iron material according to any one of claims 5 to 10, characterised in that the O₂ content is 0.003 to 0.005% by weight.

12. Cast iron material according to any one of claims 5 to 10, characterised in that the O₂ content is 0.004 to 0.006% by weight.

13. Cast iron material according to any one of claims 5 to 10, characterised in that the O₂ content is 0.005 to 0.007% by weight.

14. Cast iron material according to any one of the preceding claims, characterised in that the S content is at least 0.02% by weight.

15. Cast iron material according to any one of the preceding claims, characterised in that the Mo content is 0.2 to 0.4% by weight.

16. Cast iron material according to any one of the preceding claims, characterised in that the Mn content is 0.45 to 0.65% by weight.

17. Cast iron material according to any one of the preceding claims, characterised in that the Cu content is 0.45 to 0.55% by weight.

18. Cast iron material according to any one of the preceding claims, characterised in that its Sr content is at least 0.05% by weight.

19. Cast iron material according to any one of the preceding claims, characterised in that in the cast state more than 50% of the oxygen contained therein is in the

form of a type of oxide of which the starting temperature of the reduction with oxygen is above 1,700 K.